DESCRIPTION

The 5738 is a 25-circuit electron-beam commutating tube. It employs a single stage of secondary electron multiplication and is capable of delivering 1 milliamperes output current. The beam source is a conventional electron gun with electrostatic focus and deflection. The beam is focused on a circular array of 25 secondary emission dynodes (targets) arranged behind an aperture-collector. When suitable sweep voltages are applied to the deflection plates, the beam scans this array. The secondary emission may be modulated by the dynode-collector voltage, or for simple on-off control the grid in the electron gun may be used.

GENERAL DATA

<table>
<thead>
<tr>
<th>ELECTRICAL:</th>
<th>Min.</th>
<th>Bogie</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater for coated unipotential cathode:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage (AC or DC)</td>
<td>5.7</td>
<td>6.3</td>
<td>6.9 volts</td>
</tr>
<tr>
<td>Current</td>
<td>.55</td>
<td>.6</td>
<td>.65 amp</td>
</tr>
<tr>
<td>Direct Interelectrode Capacitances:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynode to Dynode</td>
<td>.5</td>
<td>1</td>
<td>1.5 (\mu F)</td>
</tr>
<tr>
<td>Dynode to Aperture Plate</td>
<td>.5</td>
<td>1</td>
<td>1.5 (\mu F)</td>
</tr>
<tr>
<td>Focussing Method</td>
<td>Electrostatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deflection Method</td>
<td>Electrostatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Sweep Contemplated</td>
<td>Circular</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Dynodes</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Ratio: 'Open' to 'Closed'</td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| MECHANICAL: | | | |
| Overall Length | 11-7/8 | 12 | 12-1/8 in. |
| Maximum Diameter | 2-11/16 | 2-3/4 | 2-13/16 in. |
| Mounting Position | any | | |
| Angle Subtended by Aperture | 5.76 | | deg. |
| Angle Subtended by Space between Apertures | 8.64 | | deg. |
| Gun Base | Medium shell diheptal 12 pin | | |
| Dynode Base | B26-53 | | |
| Net Weight | 12-1/4 | | oz. |

from RMA release # 698, Oct. 6, 1948
MAXIMUM RATINGS (Design Center Values)

Accelerating Anode Voltage  |  2000 max. volts
Focusing Anode Voltage    |  500 max. volts
Aperture Voltage          |  2000 max. volts
Dynode Voltage            |  500 max. volts
Dynode to Aperture Voltage|  1500 max. volts
Grid Voltage              |  0 max. volts
Positive Bias Voltage     |  -75 max. volts
Negative Bias Voltage     |  1 max. ma.
Dynode Current            |  30 max. mc/sec
Sweep Frequency (approximate)

TYPICAL OPERATING CONDITIONS

Sweep Frequency             |  8000 cycles/sec
Accelerating Anode Voltage  |  1500 volts
Focusing Anode Voltage      |  350 volts
Aperture Voltage            |  1750 volts
Grid Voltage                |  -15 volts
Dynode Voltage              |  500 volts
Dynode Current              |  0.5 ma.
Beam Current                |  0.2 ma.
Dynode Load Resistance      |  10,000 ohms.
Deflection Voltages (peak to peak sweep)
D₁ and D₂                   |  145 volts
D₃ and D₄                   |  191 volts

CHARACTERISTICS

CURVE NO. 1  2  3
E₆  -8.3 -8.3 -21
E₁₁  310  310  350
E₆₂  1500 1500 1500
E₆₆  600 1750 600
SPOT SIZE .09" .09" .04"

CURVE NO. 4  5
ACC. ANODE 1500 1500 VOLTS
APERTURE 1750 1750 VOLTS
FOCUSED AT 1 BEAM 130 510 μA.
BASE - MEDIUM SHELL
DIHEPTAL - 12 PIN

GUN SECTION
BASE CONNECTIONS
1 - HEATER
2 - CATHODE
3 - GRID
4 - CATHODE
5 - FOCUSING ANODE
7 - DEFLECTION PLATE - D1
8 - " " - D2
9 - ACCELERATING ANODE
10 - DEFLECTION PLATE - D3
11 - " " - D4
12 - NO CONNECTION
14 - HEATER

BASE - SPECIAL
WAFER - 26 PIN

DYNODE SECTION
BASE CONNECTIONS
1 TO 25 - DYNODES
26 - APERTURE PLATE